

Claims

[c1] WHAT IS CLAIMED IS:

1. A switchable gearbox of a handheld power tool, the switchable gearbox comprising:
a gear having a first switching stage and a second switching stage arranged sequentially in an axial direction of the gear, wherein the gear comprises a gear arrangement movable in the axial direction of the gear between the first and second switching stages;
an actuator rotatable about an axis parallel to the axial direction of the gear;
at least one shifting gate rotatable together with the actuator wherein the shifting gate interacts with the gear arrangement for moving the gear arrangement in the axial direction.

[c2] 2. The gearbox according to claim 1, wherein the at least one shifting gate has a central area extending linearly and at a slant relative to a circumferential direction of the gear.

[c3] 3. The gearbox according to claim 2, wherein the at least one shifting gate has end sections on each end of the central area, wherein the end sections extend parallel to

the circumferential direction.

- [c4] 4. The gearbox according to claim 1, further comprising at least one guide pin movable together with the gear arrangement in the axial direction and engaging at least substantially without play the at least one shifting gate.
- [c5] 5. The gearbox according to claim 4, wherein two of the at least one guide pin are provided and displaced relative to one another relative to a circumferential direction of the gear, wherein the two guide pins each engage one of the at least one shifting gate.
- [c6] 6. The gearbox according to claim 4, further comprising a wire bracket surrounding at least partially in the circumferential direction of the gear the gear arrangement and being secured in the circumferential direction on a housing of the power tool, wherein the at least one guide pin is a part of the wire brackets.
- [c7] 7. The gearbox according to claim 1, further comprising a locking device for the actuator.
- [c8] 8. The gearbox according to claim 7, wherein the locking device acts in a radial direction and comprises a leaf spring having a radially inwardly bent portion cooperating with a radially outwardly projecting projection.

- [c9] 9. The gearbox according to claim 7, wherein the locking device acts radially and comprises a spring element arranged axially and cooperating with an axial locking recess.
- [c10] 10. The gearbox according to claim 1, further comprising a switching member rotatable relative to the actuator, wherein the actuator and the switching member are connected to one another in a circumferential direction of the gear by a spring arrangement, wherein the at least one shifting gate is arranged on the switching member, wherein the actuator, the switching member, and the at least one shifting gate provide a synchronization device.
- [c11] 11. The gearbox according to claim 10, wherein the switching member is arranged in a housing of the power tool so as to be rotatable in the circumferential direction and fixed in the axial direction.
- [c12] 12. The gearbox according to claim 10, wherein the actuator is arranged on the switching member to be rotatable in the circumferential direction and fixed in the axial direction.
- [c13] 13. The gearbox according to claim 10, wherein the spring arrangement comprises two pretensioned compression springs arranged in the circumferential direc-

tion symmetrically to one another.

- [c14] 14. The gearbox according to claim 10, wherein the spring arrangement is a coil spring arranged centrally on the actuator in the circumferential direction.
- [c15] 15. The gearbox according to claim 10, wherein the gear is a planetary gear comprising a ring gear wherein the ring gear is the gear arrangement.
- [c16] 16. The gearbox according to claim 15, wherein the actuator and the switching member surround the ring gear at least partially and are rotatable coaxially to the ring gear.
- [c17] 17. The gearbox according to claim 1, wherein the first and second switching stages are speeds having different initial rotary speed.
- [c18] 18. The gearbox according to claim 1, wherein the gear is a planetary gear comprising a ring gear wherein the ring gear is the gear arrangement.
- [c19] 19. A power tool comprising a gearbox according to claim 1.